

Amendment to the Claims:

Before claim 1, please delete the word "Claims" and substitute the following:

What is claimed is:

Please cancel claims 1-16 and add the following new claims 17-32:

17. (New) A driving device for a centrifugal separator, the centrifugal separator including:

a centrifugal rotor rotatable about a substantially vertical rotational axis (R);

a spindle that supports at one end thereof the centrifugal rotor;

a frame, rotatably supporting the spindle during normal operation of the centrifugal rotor by means of a first bearing and a second bearing, said first bearing being arranged between the centrifugal rotor and said second bearing;

said driving device comprising an electric motor arranged to drive the spindle and having a stator non-rotatably connected to the frame, and a rotor supported by the spindle between the two bearings;

a spring device arranged to permit but counteract by spring force, in an area axially between the centrifugal rotor and the electric motor, radial movement of the first bearing relative to the frame;

a bearing support member supported by the frame and arranged to prevent substantial radial movement of said second bearing; and wherein

the stator of the motor is fixed to the frame and is immovable relative thereto, the rotor of the motor being radially movable relative to the stator together with the spindle, a gap between the rotor and the stator of the motor being dimensioned to permit the radial movement of the rotor of the motor.

18. (New) A driving device according to claim 17, further comprising a lubricating device arranged for lubrication of said two bearings,

the lubricating device having a generating member for generating an oil mist in an oil chamber,

the first bearing and the second bearing being arranged in a first bearing chamber and a second bearing chamber, respectively, through which oil passages communicate with said oil chamber, and wherein

the gap between the rotor and the stator of the motor forms at least part of a flow path for oil axially through the motor .

19. (New) A driving device according to claim 18, wherein the lubricating device comprises a fan device arranged to transport oil mist in a circuit that includes the said gap.
20. (New) A driving device according to claim 19, wherein the fan device is connected to the spindle for rotation therewith.
21. (New) A driving device according to claim 20, wherein the fan device is arranged between the first bearing chamber and an intermediate chamber in communication with the gap, the fan device being arranged to transport oil mist in one of the directions between the first bearing chamber and the intermediate chamber.
22. (New) A driving device according to claim 19, wherein the circuit includes the gap and at least one further passage connecting the said bearing chambers with each other.
23. (New) A driving device according to claim 22, wherein the passage is delimited between and outside of the frame and a member connected to the frame .
24. (New) A driving device according to claim 22, wherein the passage includes several channels evenly distributed around the spindle and delimited between the frame and the member.
25. (New) A driving device according to claim 23, wherein the frame is surrounded by a jacket forming said member and delimiting a space for through flow of a cooling medium in heat transferring contact with the frame .
26. (New) A driving device according to claim 25, wherein the jacket is double-walled, an inner one of the jacket walls delimiting the channels together with the frame .
27. (New) A driving device according to claim 17, wherein the centrifugal rotor is supported at the upper end of the spindle.

28. (New) A driving device according to claim 17, wherein the first bearing is arranged to take up substantially all axial forces to be transferred between the spindle and the frame.
29. (New) A driving device according to claim 17, wherein the rotor of the motor is coupled at one end of the spindle in such a way that it is radially immovable relative to the spindle in an area adjacent a location where the spindle is coupled to the motor rotor, the motor rotor being otherwise radially movable relative to the spindle.
30. (New) A driving device according to claim 17, wherein rotor of the motor comprises a first part in the form of a substantially cylindrical sleeve connected to the spindle, and a second part surrounding the sleeve and connected to an outside surface thereof.
31. (New) A driving device according to claim 17, wherein the rotor of the motor surrounds the spindle, a heat-insulating gap being formed between the rotor and the spindle at least along a part of the rotor of the motor.
32. (New) A driving device according to claim 27, wherein the frame surrounds a space in which the electric motor and a part of the spindle and also the two bearings are arranged, the frame being formed such that said space is closed from connection with the surrounding atmosphere below said first bearing.